

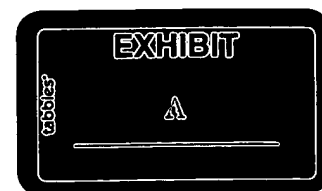
McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

**Sixth
Edition**

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

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McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition

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defined on a sigma algebra of subsets of a set S such that (1) the value of m on the empty set is 0, (2) the value of m on a countable union of disjoint sets is the sum of its values on each set, and (3) m assumes at most one of the values $+\infty$ and $-\infty$. ('sɪd 'meɪz-ər)

agnet-ring cell [HISTOL] A cell with a large fat- or carbohydrate-filled vacuole that pushes the nucleus against the cell membrane. ('sɪg-nət ,rɪŋ 'sel)

agn flag [COMPUT SCI] A bit in a status byte in a computer's central processing unit that indicates whether the result of an arithmetic operation is positive or negative. ('sɪn ,flag)

significance [MATH] The arbitrary rank, priority, or order of relative magnitude assigned to a given position in a number. ('sɪg-nɪf-i-kəns)

significance arithmetic [COMPUT SCI] A rough technique for estimating the numbers and positions of the significant digits of the radix approximation that results when an arithmetic operation is applied to operands in radix approximation form. ('sɪg-nɪf-i-kəns ,ə-rɪθ-mə-tɪk)

significance level See level of significance. ('sɪg-nɪf-i-kəns ,lev-əl)

significance probability [STAT] The probability of observing a value of a test statistic as significant as, or even more significant than, the value actually observed. ('sɪg-nɪf-i-kəns ,prəb-ə-bil-əd-ē)

significant digit See significant figure. ('sɪg-nɪf-i-kənt ,dɪj-ɪt)

significant figure [MATH] A prescribed decimal place which determines the amount of rounding off to be done; this is usually based upon the degree of accuracy in measurement. Also known as significant digit. ('sɪg-nɪf-i-kənt ,fɪg-yər)

significant wave [OCEANOGR] Statistically, a wave with the average height of the highest third of the waves of a given wave group. ('sɪg-nɪf-i-kənt ,wæv)

signless Stirling number [MATH] The absolute value of a Stirling number of the first kind. ('sɪn-ləs 'stər-lɪŋ ,nəm-bər)

sign of aggregation [MATH] One of a pair of parentheses, braces, brackets, or bars which signify that the terms they enclose are to be treated as a single term. ('sɪn əv ,ag-ə-gə-ʃən)

sign of the zodiac [ASTRON] The zodiac is divided into 12 sections, called signs, in each of which the sun is situated for 1 month of the year; each sign, 30° in length, is named from a constellation with which the sign once coincided. ('sɪn əv ,zə-dē-ək)

sign position [COMPUT SCI] That position, always at or near the left or right end of a numeral, in which the algebraic sign of the number is represented. ('sɪn pə ,zɪʃ-ən)

sign stimulus [PSYCH] A specific external stimulus that initiates certain behavioral sequences that typically occur in a fixed stereotyped fashion. ('sɪn ,stɪm-yə-ləs)

sign test [STAT] A test which can be used whenever an experiment is conducted to compare a treatment with a control on a number of matched pairs, provided the two treatments are assigned to the members of each pair at random. ('sɪn ,test)

signum [MATH] The function $\text{sgn}(x)$, defined for all real values of x , where $\text{sgn}(x) = 1$ if $x > 0$, $\text{sgn}(x) = -1$ if $x < 0$, and $\text{sgn}(0) = 0$. ('sɪg-nəm)

sigua [METEOROL] A straight-blowing monsoon gale of the Philippines. ('sɪ-wə)

sikussak [OCEANOGR] Very old sea ice trapped in fjords; it resembles glacier ice because snowfall and snow drifts contribute to its formation. (sə'kʊ,sək)

SIL See speech interference level.

silage [AGR] Green or mature fodder that is fermented to retard spoilage and produce a succulent winter feed for livestock. ('sɪ-lɪj)

silane [INORG CHEM] Si_4H_{10} A class of silicon-based compounds analogous to alkanes, that is, straight-chain, saturated paraffin hydrocarbons; they can be gaseous or liquid. Also known as silicon hydride. ('sɪ-lən)

silanol [CHEM] A member of the family of compounds whose structure contains a silicon atom that is bound directly to one or more hydroxyl groups. ('sɪ-lə,nəl)

silcrete [GEOL] A conglomerate of sand and gravel cemented by silica. ('sɪl,kret)

silent discharge [ELECTR] An inaudible electric discharge in air that occurs at high voltage and consumes a relatively large amount of energy. ('sɪ-lənt 'dɪs,ʃɑrʒ)

silent mutation [GEN] A mutation that does not result in amino acid sequence change. ('sɪ-lənt myu'tā-shən)

silent period [COMMUN] Period during each hour in which ship and shore radio stations must remain silent and listen for distress calls. ('sɪ-lənt 'pɪr-ē-əd)

silent speed [ENG] The speed at which silent motion pictures are fed through a projector, equal to 16 frames per second (sound-film speed is 24 frames per second). ('sɪ-lənt 'spɛd)

silent stock support [MECH ENG] A flexible metal guide tube in which the stock tube of an automatic screw machine rotates; it is covered with a casing which deadens sound and prevents transfer of noise and vibration. ('sɪ-lənt 'stæk sə,pɔrt)

sillex [MATER] Heat- and shock-resistant glass containing about 98% quartz. [MINERAL] A pure or finely ground quartz. ('sɪ-leks)

sillexite [GEOL] Chert occurring in calcareous beds. [PETR] Igneous rock composed mainly of primary quartz. ('sɪ-lek-sɪt)

silhouette target [ORD] 1. Target whose shape is outlined against a light background, although its body features cannot be clearly seen. 2. Practice target consisting of the dark image of a person or object outlined against a light background. ('sɪl-ə-wet 'tār-gət)

silica [MINERAL] SiO_2 Naturally occurring silicon dioxide; occurs in five crystalline polymorphs (quartz, tridymite, cristobalite, coesite, and stishovite), in cryptocrystalline form (as chalcedony), in amorphous and hydrated forms (as opal), and combined in silicates. ('sɪl-ə-kə)

silica aerogel [MATER] A colloidal silica powder whose grains have small pores; used as a low-temperature insulator. ('sɪl-ə-kə 'er-ə-jel)

silica brick [MATER] A type of refractory brick formed of at least 90% silica cemented with, for example, slurred lime; used to line furnace roofs. ('sɪl-ə-kə 'brɪk)

silica cement [MATER] A mortar used with silica cement; it is a refractory material. ('sɪl-ə-kə sɪ'ment)

silica flour [MET] A sand additive for casting produced by pulverizing quartz sand. ('sɪl-ə-kə 'flaʊ-ər)

silica fume [MATER] A fine-particulate waste product of electric-arc furnaces, consisting primarily of amorphous (non-crystalline) silicon dioxide; its most important use is in the production of high-strength concrete. Also known as micro-silica. ('sɪl-ə-kə ,fyʊm)

silica gel [INORG CHEM] A colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent, as a catalyst carrier, and sometimes as a catalyst. ('sɪl-ə-kə 'jel)

silica glass [MATER] A translucent or transparent vitreous material consisting almost entirely of silica. Also known as fused silica; vitreous silica. ('sɪl-ə-kə 'glas)

silica sand [GEOL] Sand having a very high percentage of silicon dioxide; a source of silicon. ('sɪl-ə-kə 'sand)

silica stone [PETR] A sedimentary rock composed of siliceous minerals. ('sɪl-ə-kə 'stɒn)

silicate [INORG CHEM] The generic term for a compound that contains silicon, oxygen, and one or more metals, and may contain hydrogen. [MINERAL] Any of a large group of minerals whose crystal lattice contains SiO_4 tetrahedra, either isolated or joined through one or more of the oxygen atoms. ('sɪl-ə-kət)

silicate cement [MATER] The silicate of soda glue, used as an adhesive in cardboard and plywood boxes. ('sɪl-ə-kət sɪ'ment)

silicate cotton See mineral wool. ('sɪl-ə-kət 'kæt-ən)

silicate grinding wheel [DES ENG] A mild-acting grinding wheel where the abrasive grain is bonded with sodium silicate and fillers. ('sɪl-ə-kət 'grɪnd-ɪŋ ,wɛl)

silicate of soda See sodium silicate. ('sɪl-ə-kət əv 'sɒd-ə)

silicate paint [MATER] A paint in which the vehicle is water-soluble sodium silicate; used for painting mortar. ('sɪl-ə-kət 'pənt)

silication [GEOL] The conversion to or the replacement by silicates. (,sɪl-ə'kə-shən)

silicization [MIN ENG] The sealing off of water by the injection of calcium silicate under pressure; sometimes used to reduce the leakage of water through defective lengths of tubing in a shaft. (,sɪl-ə,kə-d-ə'zā-shən)

siliceous [PETR] Describing a rock containing abundant silica, especially free silica. (sə'lish-əs)